REMARKS

Claims 1-4, 9-19, 71, 74-81, 86, 88, and 94-112 were pending and stand rejected. Claims 1, 88, 94, 107, and 110-112 have been amended.

Claims 1, 4, 9-10, 12-18, 71, 74-75, 77-78, 94-96, 98-104, and 106-107 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Grinstein. Applicants respectfully traverse.

CLAIM 1

As amended, claim 1 recites:

> In a computer-implemented animation system, a method for animating an object, the method comprising:
>
> receiving a first input, the first input specifying a first parameter behavior, the first parameter behavior indicating how to change a value of a first parameter over time, wherein the first parameter applies to one element of a group consisting of a filter applied to the object and a generator applied to the object, and wherein the filter comprises an image processing effect, and wherein the generator comprises a repeating image wherein the repeated images are shown simultaneously;
>
> animating the object by changing the value of the first parameter over time according to the specified parameter behavior; and
>
> outputting the animated object.

As recited in claim 1, a "parameter behavior" indicates how to change, over time, a value of a parameter of a filter or generator that is applied to the object. A filter comprises "an image processing effect" (¶¶245, 841, 1627), and a generator comprises "a repeating image wherein the repeated images are shown simultaneously" (¶1567). A filter or generator can be customized using a parameter. The value of the parameter affects the filter or generator, which in turn affects the appearance of an object. For example, a filter with a parameter value of 1 will result in a different appearance than the same filter with a parameter value of 10. The value of a filter's parameter or a generator's parameter can be programmatically animated (i.e., changed over time) by using a parameter behavior (¶¶245, 248, 487). This results in different appearances as time goes on, based on the different values of the parameter.

Grinstein discusses modeling motion in computer applications (title). Grinstein does not disclose, teach, or suggest the claimed element "the first parameter behavior indicating how to change a value of a first parameter over time, wherein the first parameter applies to one element of a group consisting of a filter applied to the object and **a generator applied to the object**, and wherein the filter comprises an image processing effect, and wherein **the generator comprises a repeating image wherein the repeated images are shown simultaneously**" (emphasis added).

Applicants agree with the Examiner that Grinstein does not use the language "generator" (Detailed Action, page 3). The Examiner argues that the Ramp and Ease controls applied to the Swing motion applied to the object are analogous to generators (Detailed Action, p. 3). Applicants disagree in view of the newly amended claim.

The Ramp sliders control the acceleration and deceleration in and out of an entire motion (51:24-25). The Ease sliders control the acceleration and deceleration to and from a displacement sequence (51:25-27). As recited in claim 1, a generator comprises a repeating image <u>wherein the repeated images are shown simultaneously</u>. In Grinstein, the object is rendered at each of a succession of time values with <u>individual ones</u> of the object's nodes (image frames) being shown in each successive rendering (75:46-49). Thus, neither the Ramp controls nor the Ease controls are generators.

Grinstein does not mention filters, wherein a filter comprises an image processing effect.

Thus, Grinstein does not disclose, teach, or suggest the claimed element "the first parameter behavior indicating how to change a value of a first parameter over time, wherein the first parameter applies to one element of a group consisting of a filter applied to the object and a generator applied to the object, and wherein the filter comprises an image processing effect, and wherein the generator comprises a repeating image wherein the repeated images are shown simultaneously."

Therefore, claim 1 (as amended) is patentable over Grinstein.

CLAIM 71

Claim 71, which has not been amended, recites:

A method for animating an object using a behavior, comprising:
outputting an original animation for the object according to a first parameter behavior, the first parameter behavior indicating how to change a value of a first parameter over time, wherein the first parameter applies to a motion behavior applied to the object;
concurrently with outputting the original animation:
receiving a first user input, the first user input directly specifying a second parameter of the motion behavior; and
receiving a second user input, the second user input directly specifying a second parameter behavior, the second parameter behavior indicating how to change a value of the second parameter over time; and
outputting an updated animation for the object according to the first parameter behavior and further according to the second parameter behavior.

As recited in claim 71, a "parameter behavior" indicates how to change, over time, a value of a parameter of a "motion behavior." As explained in the application, in one embodiment, a motion behavior changes an object's position over time, thereby animating the object (¶247). A motion behavior can be customized using a parameter (¶9). The value of the parameter affects the motion behavior, which in turn affects the animation of an object. For example, a motion behavior with a parameter value of 1 will result in a different animation than the same motion behavior with a parameter value of 10.

The value of a motion behavior's parameter can be programmatically animated (i.e., changed over time) by using a parameter behavior (¶402). This results in different animations as time goes on, based on the different values of the parameter. For example, consider the Drag parameter of the Orbit Around motion behavior (¶404). If the value of the Drag parameter is kept constant over time, the object moves in a regular orbit with a circular motion path (¶404; FIG. 34). If, instead, the value of the Drag parameter is increased over time (e.g., using the Ramp

parameter behavior), the object's orbit slowly decays over time, causing the object to fall towards the center of the orbit with a spiral motion path (¶404; FIG. 35).

Grinstein does not disclose, teach, or suggest the claimed element "outputting an updated animation for the object according to the first parameter behavior and further according to the second parameter behavior." The Examiner argues that Grinstein's Gravity controller and Wind controller correspond to the claimed elements "first parameter behavior" and "second parameter behavior," respectively (Detailed Action, pp. 7-8). Grinstein states that only one controller for each DOF (degree of freedom) group can be active at one time (29:49-50). Since the Gravity controller and the Wind controller both affect an object's position, they cannot be active at the same time. Thus, Grinstein cannot animate an object according to the Gravity controller and the Wind controller simultaneously.

It follows that Grinstein does not disclose, teach, or suggest the claimed element "outputting an updated animation for the object according to the first parameter behavior and further according to the second parameter behavior."

Therefore, claim 71 is patentable over Grinstein.

<u>CLAIM 94</u>

As amended, claim 94 recites:

In a computer-implemented animation system, a method for animating an object, the method comprising:

receiving a first user input, the first user input directly specifying a first parameter of a behavior applied to the object;

receiving a second user input, the second user input directly specifying a first parameter behavior, the first parameter behavior indicating how to change a value of the first parameter over time;

animating the object by changing the value of the first parameter over time according to the first parameter behavior, wherein animating the object comprises not changing the object's position; and

outputting the animated object.

As recited in claim 94, a "parameter behavior" indicates how to change, over time, a value of a parameter of a "behavior." As explained in the application, in one embodiment, a behavior changes an object's size or opacity over time, thereby animating the object (¶¶223-224). A behavior can be customized using a parameter (¶9). The value of the parameter affects the behavior, which in turn affects the animation of an object. For example, a behavior with a parameter value of 1 will result in a different animation than the same behavior with a parameter value of 10. The value of a motion behavior's parameter can be programmatically animated (i.e., changed over time) by using a parameter behavior (¶402). This results in different animations as time goes on, based on the different values of the parameter.

Grinstein does not disclose, teach, or suggest the claimed element "animating the object by changing the value of the first parameter over time according to the first parameter behavior, wherein animating the object comprises not changing the object's position." The Examiner argues that Grinstein's Wind controller corresponds to the claimed element "parameter behavior" (Detailed Action, pp. 10). The Wind controller affects an object's position. Thus, the Wind controller cannot be used to animate an object without changing the object's position.

It follows that Grinstein does not disclose, teach, or suggest the claimed element "animating the object by changing the value of the first parameter over time according to the first parameter behavior, wherein animating the object comprises not changing the object's position."

Therefore, claim 94 (as amended) is patentable over Grinstein.

CLAIM 88

Claims 11, 88, 97, and 110 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Grinstein. Applicants respectfully traverse in view of the newly amended claim.

As amended, claim 88 recites:

In a computer-implemented animation system, a method for animating an object, the method comprising:

receiving an input, the input specifying a behavior to apply to the object, the behavior indicating how to change a value of a parameter of the object over time;

animating the object by changing the value of the parameter of the object over time according to the specified behavior; and

outputting the animated object;

wherein the behavior comprises one from a group consisting of:

a Drag behavior, which changes a position of the object based on a simulated friction regardless of the object's proximity to a location; and

a Rotational Drag behavior, which changes a rotation of the object based on a simulated friction regardless of the object's proximity to a location.

Claim 88 recites, in part, "a behavior to apply to the object … wherein the behavior comprises one from a group consisting of: a Drag behavior, which changes a position of the object based on a simulated friction regardless of the object's proximity to a location; and a Rotational Drag behavior, which changes a rotation of the object based on a simulated friction regardless of the object's proximity to a location" (emphasis added). As described in the pending application, the Drag behavior is meant to be applied to a moving object (i.e., an object whose position parameter is changing over time) (¶623). The Rotational Drag behavior is meant to be applied to a spinning object (i.e., an object whose rotation parameter is changing over time) (¶731). These behaviors can be used, for example, to simulate the effect of friction on a moving object (¶¶623, 731). This friction can be thought of as the difference between an object moving through a gas (e.g., air) and the same object moving through a liquid (e.g., water). In other words, this friction affects the moving object whether or not the moving object is touching and/or close to another object (or location).

Grinstein does not disclose, teach, or suggest the claimed element "a behavior to apply to the object … wherein the behavior comprises one from a group consisting of: a Drag behavior, which changes a position of the object based on a simulated friction regardless of the object's

proximity to a location; and a Rotational Drag behavior, which changes a rotation of the object based on a simulated friction regardless of the object's proximity to a location." A boundary behavior's "gain" and "bias" parameters, which were cited by the Examiner, can be used to simulate effects of gain or loss of momentum (e.g., due to friction) (36:17-20). However, even if the object changes momentum, it must still move according to a boundary behavior. Boundary behaviors, which include reflect, clamp, and onto, require that the object be close to a boundary (35:25-36:15). Thus, friction can be simulated only if the object is proximate a boundary's location. Friction cannot be simulated for an object if the object is not proximate a boundary's location. It follows that Grinstein does not change a position of an object based on a simulated friction regardless of the object's proximity to a location.

Thus, Grinstein does not disclose, teach, or suggest the claimed element "a behavior to apply to the object … wherein the behavior comprises one from a group consisting of: a Drag behavior, which changes a position of the object based on a simulated friction regardless of the object's proximity to a location; and a Rotational Drag behavior, which changes a rotation of the object based on a simulated friction regardless of the object's proximity to a location."

Therefore, claim 88 (as amended) is patentable over Grinstein.

CLAIM 86

Claim 86 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Grinstein in view of Unuma. Applicants respectfully traverse. Additionally, for the record, Applicants traverse the Examiner's assertions concerning the motivation to combine Grinstein and Unuma.

Claim 86, which has not been amended, recites:

In a computer-implemented animation system, a method for animating an object, the method comprising:

receiving an input, the input specifying a behavior, the behavior indicating how to change a value of a parameter of the object over time;

animating the object by changing the value of the parameter of the object over time according to the specified behavior; and

outputting the animated object;

wherein the behavior comprises an Align to Motion behavior, which changes a rotation of the object based on a motion path of the object such that the rotation is not changed if the motion path is straight, and which can be configured regarding at least one of how quickly the object's rotation changes based on a change in the object's motion path and whether or not the object's change in rotation overshoots a new direction of the object.

Claim 86 recites, in part, "wherein the behavior comprises an Align to Motion behavior, which changes a rotation of the object based on a motion path of the object such that the rotation is not changed if the motion path is straight, and which can be configured regarding at least one of how quickly the object's rotation changes based on a change in the object's motion path and whether or not the object's change in rotation overshoots a new direction of the object." As described in the pending application, the Align to Motion behavior is meant to be applied to a moving object (i.e., an object whose position parameter is changing over time) (¶581). This behavior changes the rotation of the object to match changes made to the object's direction along its motion path (¶581). The Align to Motion behavior can be used, for example, to cause an object to face the direction in which it is moving. Unlike the Snap Alignment to Motion behavior, which produces absolute changes in rotation that precisely match changes in direction, the Align to Motion behavior has a springy effect (¶582) due to the Spring Tension parameter (¶587) and the Drag parameter (¶588).

Applicants agree with the Examiner that Grinstein does not disclose, teach, or suggest the claimed element "wherein the behavior comprises an Align to Motion behavior, which changes a rotation of the object based on a motion path of the object such that the rotation is not changed if the motion path is straight." It follows that Grinstein also does not disclose, teach, or suggest the claimed element "wherein the behavior comprises an Align to Motion behavior, which changes a rotation of the object based on a motion path of the object such that the rotation is not changed if

the motion path is straight, and which can be configured regarding at least one of how quickly the object's rotation changes based on a change in the object's motion path and whether or not the object's change in rotation overshoots a new direction of the object."

Unuma does not remedy this deficiency. Unuma discusses a transit point specifying unit and a moving direction controller (¶133; FIG. 17). The transit point specifying unit specifies transit points that are connected to each other with a curve so as to create a moving route designated by a position and a curve (¶133; FIG. 18). Then, the moving direction controller rotates the object so that the front side of the object is oriented to a direction of a tangent of the curve at a position of the object moving on the curve (¶133).

Claim 86 recites, in part, "which can be configured regarding at least one of how quickly the object's rotation changes based on a change in the object's motion path and whether or not the object's change in rotation overshoots a new direction of the object" (emphasis added). In Unuma, the object's rotation is always equal to the tangent of the object's motion path. Thus, the rotation cannot be modified in any way, let alone configured regarding at least one of how quickly the object's rotation changes based on a change in the object's motion path and whether or not the object's change in rotation overshoots a new direction of the object.

The Examiner argues that in Unuma, an object's rate of rotation depends on the location of the transit point (Detailed Action, p. 23). Specifically, the Examiner states that by specifying the transit point and, in turn, the difference between the original orientation of the object and the orientation when facing the transit point, one specifies how quickly the object's rotation changes (Detailed Action, p. 23).

Applicants disagree. Unuma does not address the speed of rotation. Specifically, Unuma does not state whether the moving direction controller rotates the object instantly or more slowly

(i.e., over time). Whether Unuma's rotation is instant or gradual, Unuma does not disclose, teach, or suggest being able to configure the rotational speed.

It follows that Unuma does not disclose, teach, or suggest "which can be configured regarding at least one of how quickly the object's rotation changes based on a change in the object's motion path and whether or not the object's change in rotation overshoots a new direction of the object."

Thus, neither Grinstein nor Unuma, alone or in combination, discloses, teaches, or suggests the claimed element "wherein the behavior comprises an Align to Motion behavior, which changes a rotation of the object based on a motion path of the object such that the rotation is not changed if the motion path is straight, and which can be configured regarding at least one of how quickly the object's rotation changes based on a change in the object's motion path and whether or not the object's change in rotation overshoots a new direction of the object."

Therefore, claim 86 is patentable over Grinstein and Unuma, alone and in combination.

CLAIM 112

Claim 112 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Grinstein in view of Perlin. Applicants respectfully traverse in view of the newly amended claim. Additionally, for the record, Applicants traverse the Examiner's assertions concerning the motivation to combine Grinstein and Perlin.

As amended, claim 112 recites:

In a computer-implemented animation system, a method for animating an object, the method comprising:

receiving an input, the input specifying a behavior, the behavior indicating how to change a value of a parameter of the object over time;

animating the object by changing the value of the parameter of the object over time according to the specified behavior; and

outputting the animated object;

wherein the behavior comprises one from a group consisting of:

an Attracted To behavior, which changes a position of the object based on a position of a second object while not affecting the position of the second object;

an Attractor behavior, which changes a position of a second object based on a position of the object while not affecting the position of the object;

a Drift Attracted To behavior, which changes a position of the object based on a position of a second object while not affecting the position of the second object; and

a Drift Attractor behavior, which changes a position of a second object based on a position of the object while not affecting the position of the object; and

wherein the behavior can be modified using at least one of:

a falloff rate parameter, which determines a rate of acceleration with which an attracted object moves towards an object of attraction; and

a drag parameter, which determines whether an attracted object overshoots an object of attraction.

Applicants agree with the Examiner that Grinstein does not disclose, teach, or suggest "a Drift Attracted To behavior, which changes a position of the object based on a position of a second object while not affecting the position of the second object." Assume, *arguendo*, that Grinstein and Perlin together disclose, teach, or suggest "wherein the behavior comprises one from a group consisting of: an Attracted To behavior…; an Attractor behavior…; a Drift Attracted To behavior…; and a Drift Attractor behavior…."

Grinstein discusses a Gravity Controller and an Attraction Controller (53:1-6). Although each Controller is described as having various parameters (strength, direction, location, shape, and focus), Grinstein does not explain what each of these parameters does (53:1-6). Specifically, Grinstein does not disclose, teach, or suggest a falloff rate parameter or drag parameter, as recited in claim 112. It follows that Grinstein does not disclose, teach, or suggest the claimed element "wherein the behavior can be modified using at least one of: a falloff rate parameter…; and a drag parameter…."

Perlin does not remedy this deficiency. Perlin discusses placing an "attractor field" around an opening such as a doorway (8:20-21). Vector magnitude increases as a character nears an object (8:21-22). Perlin does not disclose, teach, or suggest <u>modifying</u> the attractor field by using a falloff rate parameter or drag parameter, as recited in claim 112. It follows that Perlin

does not disclose, teach, or suggest the claimed element "wherein the behavior can be modified using at least one of: a falloff rate parameter…; and a drag parameter…."

Thus, neither Grinstein nor Perlin, alone or in combination, discloses, teaches, or suggests the claimed element "wherein the behavior can be modified using at least one of: a falloff rate parameter…; and a drag parameter…."

Therefore, claim 112 (as amended) is patentable over Grinstein and Perlin, alone and in combination.

OTHER CLAIMS

Claims 2, 108, and 111 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Grinstein in view of Walton. Claims 3 and 105 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Grinstein in view of Gagne. Claims 19 and 109 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Grinstein in view of Anderson. Claims 76 and 79 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Grinstein in view of French. Claims 80-81 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Grinstein in view of Sowizral.

Applicants respectfully traverse. The claims not specifically mentioned above depend from their respective base claims, which were shown to be patentable over Grinstein. In addition, these claims recite other features not included in their respective base claims. Thus, these claims are patentable for at least the reasons discussed above, as well as for the elements that they individually recite.

Applicants respectfully submit that the pending claims are allowable over the cited art of record and request that the Examiner allow this case. The Examiner is invited to contact the undersigned in order to advance the prosecution of this application.

Respectfully submitted,
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